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A Visitor Use Profile of the Taylor Highway

by Greg Prothman
Bureau of Land Management
Fourtymile Resource Area
Tok, Alaska

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Resources Development Internship Program
Western Interstate Commission for Higher Education

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A VISITOR USE PROFILE OF THE TAYLOR HIGHWAY

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Prepared for The
Bureau of Land Management
Fortymile Resource Area
Tok, Alaska

by

Greg Prothman
September 5, 1977

ABSTRACT

A user profile of Alaska's Taylor Highway is compiled from systematic observation from June 27 to August 14, 1977. Data was also collected from a pneumatic road counter, and from the U.S. and Canadian Customs at Poker Creek. Campground usage figures from four campgrounds, and observations of dispersed camping and recreational activities are also included.

Analysis of data includes daily use periods, traffic volumes, typical vehicle types, numbers of passengers per vehicle, and traffic patterns. The report also includes suggestions for further study and policy recommendations.

ACKNOWLEDGEMENTS

Many people and agencies have helped to make this study a reality. I would like to thank the U.S. and Canadian Customs at Poker Creek for their cooperation and the State of Alaska, Department of Transportation for the kind use of their road counters.

I also wish to thank all the personnel in the Fortymile Resource Area who assisted in one way or another.

I would like to extend a special thanks to Jay Thatcher for his advice during the study, and for his help in logistics and editing.

This summer I have undertaken a project in a field of which I have had little previous experience. Learning a new concept or experimenting with new ideas is extremely interesting; however, it is not without its difficulties.

Fortunately, during this study I was able to work with an advisor, who was willing to take the time to answer many basic questions, and to explain new concepts. I wish to extend my deepest thanks to Dr. Arnold Holden, BLM State Sociologist, who consistently went out of his way to help make this study not only a success, but also a valuable learning experience.

A special thanks is also extended to Marsha Sakalaskas and Cindy Thurneau, who so kindly put up with constant "Where is this?" or "Where is that?" questions throughout the summer, and for the excellent job of typing this study.

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Summary of Results

Between June 27 and August 14, 1977, both systematic and informal observations were made along the Taylor Highway in eastern Alaska. The formal observation schedule was based on four hour observation blocks, on four consecutive days, between the hours of 8 a.m. to 8 p.m., at three predetermined locations on the Taylor Highway. The location of the observations were at Walker Fork Campground (MP 83), Jack Wade Junction (MP 96), and Liberty Campground (MP 131). There were six, four day observation blocks for a total of 96 hours of systematic observation.

The direction of travel, the type of vehicle, the number of occupants per vehicle, and the state (from the license plate) were recorded. In addition, the location of the observation, the day, the time, and the current weather conditions were also recorded.

A pneumatic road counter was placed at the Fortymile River Bridge (MP 112) from July 15 through August 14. A total of 1,477 vehicles were recorded. However, considering localized traffic patterns a figure of 1,350 (or an average of 45 vehicles a day) is a more realistic record of traffic on the spur to Eagle.

Border crossing figures were collected from the U.S. and Canadian Customs at Poker Creek. From June 10 through August 13 a total of 94 buses, 6,257 vehicles, and 20,804 people passed either from Canada into the U.S. or the U.S. into Canada for a daily average of about 100 vehicles and 325 people.

Analysis of the Fixed Observation

Registration of vehicles (licenses)

Of the 843 vehicles observed, Alaska represented the largest group with 48% of the sample. Washington and California followed with 6% each, respectively. Oregon was next with 3%, followed by Texas with 2%, and New York with slightly under 2%. Washington, Oregon, and California represented a major demographic region representing 15% of the sample.

Of the Canadian Provinces and Territories, Alberta had the highest portion of the sample with 6%. British Columbia and the Yukon Territories followed with 5% each. Ontario also had 2%.

British Columbia, Yukon Territories, and Alberta represented a second major demographic region accounting for 16% of the sample.

Passengers per Vehicle

The average number of passengers observed per vehicle, excluding buses, is 2.4. This figure is somewhat conservative, as only those occupants that were visible were recorded, so the average may be slightly higher.

Vehicle Types

Of the 843 vehicles observed, passenger cars represented 21% of the sample. However, the different types of pick-up trucks (i.e. pick-ups with campers, pick-ups with canopys) combined, represented 41% of the sample. Motorhomes and vans accounted for 7% each. Recreational oriented type vehicles accounted for approximately 80% of the sample.

There was a noticeable lack of large trucks on the Taylor Highway, as trucks represented 1% of the sample.

Direction of Travel

The majority of the traffic flow was between Tetlin Junction and Dawson. Traffic volumes were slightly higher south bound than north bound. The portion of the highway between Jack Wade Junction and Eagle (Eagle spur), received little usage, comparatively. That portion of the highway accounted for slightly over 20% of the total sample, of vehicles observed.

Peak Uses per Day

The sample suggests that the usage per day is consistent throughout the week. There is no apparent rise in traffic volume during the weekend.

Daily Peak Use

The peak use time is between the hours of 10 a.m. and 4 p.m., with usage low during the morning and evening hours. This can be partly explained as the Poker Creek Border crossing is open only between 8 a.m. and 8 p.m. The average car per hour is 6.6.

Informal Data

Recreation

Some of the more common recreational activities along the Taylor Highway are hiking, camping, fishing, picnicking, river rafting, sightseeing, photography, and recreational mining. The portion of the highway

between Walker Fork Campground (MP 83) and MP 92 has the heaviest concentration of recreational users. The predominate recreational activities in this area are recreational mining, sightseeing, photography and camping. Other popular areas for recreational mining are along the American Creek drainage (MP 149 to 160).

The highway also provides access to the Fortymile River and its tributaries for river rafting, canoeing, and kayaking.

Dispersed Camping

Camping in areas other than the designated campgrounds is common along the length of the Taylor Highway; however, some areas receive higher usages than others. The portion of the highway that receives the highest amount of dispersed roadside camping is the area between Walker Fork Campground and MP 92. The highway usage of this area can be attributed to the recreational mining and the over-flow of campers, when Walker Fork Campground is filled to capacity.

Campgrounds

The Taylor Highway has four campgrounds along its 169 mile length. They are 49 Mile (MP 49), Walker Fork (MP 83), Liberty (MP 131) and Eagle (MP 169). Of the four campgrounds Walker Fork is the largest, followed by Eagle, with Liberty and 49 Mile being approximately the same size.

According to the campground register figures, Walker Fork receives the highest use, followed by Eagle and 49 Mile. The majority of the usage at Liberty is day use oriented.

A limited check on the accuracy of the campground register form reveals that 75% of the campgrounds' users, sign the register forms.

Typical comments from the register forms were favorable towards the campgrounds and their general conditions.

Physical Description of the Study Area

The Taylor Highway is located in the eastern central interior of Alaska, near the Canadian Border. The highway begins at Milepost 0 at Tetlin Junction, some twelve miles east of Tok, and terminates at the Canadian Border at Poker Creek, just past Boundary. The highway is 100 miles in length with a 70 mile spur continuing to Eagle on the Yukon River.

The land surrounding the Taylor Highway is predominantly Public Lands, managed by the Bureau of Land Management. The highway does pass by several mining claims, homesteads, lands selected by the State of Alaska, under the Statehood Act, and lands selected by Alaska Native Corporations, under the Alaska Native Claims Act (ANSCA).

The Taylor Highway passes through a variety of land forms, ranging from flat lands and rolling hills at the southern end of the highway, to progressively steeper hills, with narrow river bottoms toward the northern end. Typical elevations of the mountainous regions range from 1500 feet to 3500 feet. In the higher elevations the highway passes through some alpine and subalpine regions, while the lower elevations are predominantly forested with birch, spruce, and aspen.

The highway passes through several old forest fire areas. The most noted of these is the area around Milepost 50 and Milepost 120.

There are remains of past placer mining activities along certain portions of the highway, as evidenced by the many dredge tailings between Milepost 82 and Milepost 92, and the Jack Wade dredge located at Milepost 86. Currently the highway passes by or through three active mines. These are the Lost Chicken Mine (MP 70) and two mining claims between Milepost 84 and mile 90. In this area, the highway was built from surrounding tailings piles.

There are four campgrounds located along the Taylor Highway. Walker Fork, the largest, has a total of approximately 30 sites. The campgrounds are: Forty-nine Mile (MP 49), Walker Fork (MP 83), Liberty (MP 131.5), and Eagle (MP 169).

Located along the highway are several small communities, the most noted of these are Chicken (MP 67), with a summer population of approximately 50, and Eagle, (MP 169) with a summer population of 500 and winter population of 60.

Public services such as gas, minor automotive repairs, food, and lodging can be obtained at Eagle, Boundary (located nine miles from Jack Wade Junction at the terminus of the Taylor Highway), and O'Brien Creek Lodge (MP 125.4). Boundary and O'Brien Creek Lodge also serve alcoholic beverages. Postal services are available at the Chicken and Eagle Post Offices. The Eagle Post Office also serves as a U.S. Customs Office for river and air traffic entering from the Yukon Territory.

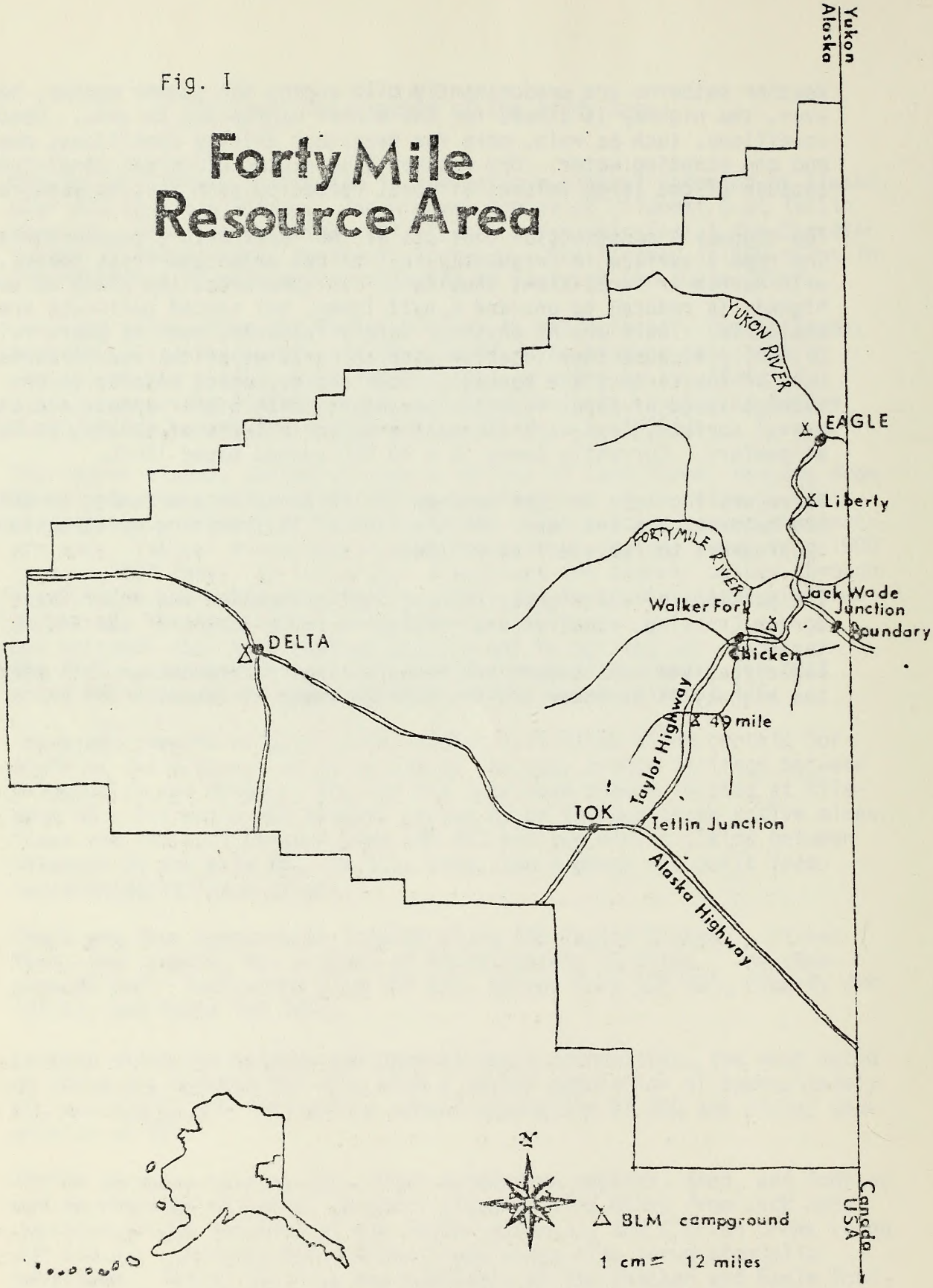
Weather patterns are predominantly mild during the summer months, however, the highway is closed for the winter months due to snow. Weather conditions, such as rain, make for hazardous driving conditions, due to mud and standing water. Dry weather also causes dangerous conditions because of the large volumes of dust, raised by each passing vehicle.

The highway's construction consists of two lanes with a gravel surface. The road's surface is frequently full of pot holes and frost heaves, with narrow or nonexistent shoulders. In some areas the width of the highway is reduced to one and a half lanes, but spaced pull-outs are available. There are no physical safety features, such as guard rails, primarily because they interfer with the grading of the road's surface. Most of the corners are banked to some degree, which results in an average speed of about 40 miles per hour. With higher speeds and the gravel surface, dust is a constant problem in terms of safety, as well as comfort. Currently there is a 40 MPH posted speed limit.

There are fourteen bridges between Tetlin Junction and Eagle, of which the majority are one lane. At the time of this writing construction was in progress to replace five of these.

The portions of the highway between Tetlin Junction and Poker Creek Border Crossing, requires and receives a large amount of use and maintenance. The portion of the highway between Jack Wade Junction and Eagle receives less usages and requires less maintenance. This part of the highway is narrower and the average speed is lower.

Fig. I


Forty Mile
Resource Area
Yukon
Alaska
YUKON RIVER
EAGLE
Liberty
FORTYMILE RIVER
Jack Wade
Junction
Walker Fork
Boundary
Chicken
DELTA
49 mile
Taylor Highway
TOK
Tetlin Junction
Alaska Highway
Canada
USA
BLM campground
1 cm = 12 miles

Project Methodology

The data collection methods can be divided into two categories.

1) Statistical Data: This refers to data compiled through recorded observations, at predetermined locations, and at systematically schedules times. Statistical collection also included a pneumatic road counter, located at the Fortymile River Bridge, and U.S./Canadian Border Crossing figures obtained from the U.S. and Canadian Customs at Poker Creek.

2) Informal Data: This refers to data recorded through chance encounters, such as passing a vehicle along the highway. Informal data also includes casual conversations with the highway's users, in which questions concerning the highway were asked.

Statistical Data

Specifically, this collection method entailed observations from fixed locations along the Taylor Highway. These observation points were located at Walker Fork Campground (MP 86), Jack Wade Junction (MP 95.2), Fortymile River Bridge (MP 112), and Liberty Campground (131.5).

Each observation period was four hours long. There was one observation per day for four consecutive days. The first observation was at Walker Fork Campground, the second and third were at Jack Wade Junction the next two days, and the fourth and final observation was at Liberty Campground. The observation blocks were eight days in length, four days for the observations, one day for travel back to Tok and one day for analysis and write up, and the remaining two days off. When the eight day observation block was applied to the seven day week, this resulted in the observations starting on a new day each week. In this manner, all days of the week were subjected to observations.

The times of observation at each fixed observation point were staggered. Observations were made from 8 a.m. to 8 p.m. There were a total of six, eight day observation blocks between June 27 and August 14, for a total of 96 hours of fixed observations.

A minimum of 12 hours of observations from 8 a.m. to 8 p.m. were spent at each observation point. In this manner, a full day of observations were spent on each location. Typically though, close to two full days of observations were spent at each location.

The Liberty Creek Campground observation point was moved to the Fortymile River bridge after three observations. The change in locations was designed to observe the vehicles cross a pneumatic road counter placed at the bridge. The twenty mile difference between the two locations had little or no effect on the data collected, because there are no major communities or road systems between Liberty Campground and the Fortymile

Bridge. Conversation with a local resident indicated that the road counter was receiving a substantial amount of localized traffic which would give an inaccurate reading as to the amount of vehicles using the Eagle spur. The observations were moved to see if this was true.

From each passing vehicle specific pieces of information were recorded. Each vehicle was assigned an identification number comprised of the date and sequence. The vehicle's state was recorded from its license plate. The number of passengers per vehicle were recorded, as well as the type of vehicle and the vehicle's direction of travel. The location of the fixed observation points, the day of the week, the time, and the current weather conditions were also recorded. In addition, there was also space for comments to record any outstanding feature, or notable piece of information (refer to Appendix A).

A pneumatic road counter was placed at the Fortymile Bridge on July 15, 1977. Readings were then taken through August 14 (refer to Appendix B).

Border use figures were obtained from the U.S. and Canadian Customs at Poker Creek. The U.S. Customs provided user figures from June 10 through August 14. The user figures were broken down into the number of buses, the number of vehicles other than buses, and the number of people. The Canadian Customs provided user figures from June 10 through July 14, which were also broken down into the number of buses, the number of vehicles other than buses, and the number of people (refer to Appendix C).

Informal Data

The informal data collections were primarily composed of chance meetings. An example would be a car parked on the side of the road, or a vehicle passed in transit. The purpose of the information was to corroborate the statistical data, and to collect data not normally obtained through unobtrusive collection methods.

In addition to the happen chance observations, some comments were solicited from the highways users. Most of these conversations took place at Walker Fork Campground, and at various roadside picnic areas. These conversations were not designed as a formal survey. The questions asked were concerned with how the user became aware of the Fortymile Resource Area, their comments or reactions toward the highway's conditions and its facilities, such as campgrounds and picnic areas, and their origin and destination.

In addition to statistical and informal data collection, campground use figures were also collected from Forty-nine Mile Campground, Walker Fork Campground, Eagle Campground, Liberty, and American Creek Wayside. These figures were obtained from the campground register forms. An attempt was made to check the accuracy of the register forms by counting the number of parties, and, then, comparing that figure with the number of parties registered.

Analysis of Statistical Data

During the month and a half of fixed observations, 843 vehicles were recorded from the three observation points. A total of 96 hours were spent conducting fixed observations.

The casual observation collection recorded some 249 vehicles. Originally it was thought that when compared to the fixed observation data, the casual observation data would be similar, thus allowing the two to be combined. However, the results of the casual observations reflect certain discrepancies as a result of the collection methods. The comparison of the fixed observations and informal observations revealed that certain vehicle types were recorded more often than others, which were not proportionate when compared to the findings by the fixed observations. The specific pieces of data collected from the fixed observation has provided sufficient data for confident analysis due to the size of the sample and the collection methods.

Vehicle's Registered License Plate

The state of each vehicle was recorded by observing the license plate. The results are shown in Table #1.

Alaskans represent the largest user group with 43% of the sample. This is to be expected, since the closest major population centers to the Taylor Highway are Fairbanks and Anchorage, approximately 200 and 400 miles away, respectively.

Washington and California represented 6% of the sample each. Combined with Oregon's 3% these three states comprise 15% of the total sample. Washington, Oregon, and California represent a major demographic region.

The frequency of visits from Washington and California can be explained by a proximity and population density model. Proximity and density population density models are a concept devised by sociologists to explain why areas receive certain amounts of use from various population centers. Briefly, it says that if Town A is a certain distance from, e.g., a National Park, the amounts of usage will be the same or near the same as Town B, which is twice the distance away but also has twice the population. While Washington's population is smaller than California's, it's proximity to Alaska is closer, resulting in the equal usage figures. Oregon's proximity to Alaska is farther than Washington, but closer than California; however, Oregon's population is also smaller than Washington's and California's, thus resulting in a smaller use figure. California, while being the greatest distance from the Taylor Highway, has the largest population, which accounts for its high figure.

Other states with notable usage figures are Texas with 2% of the sample, and New York with a little under 2%. Their high figures can also be accredited to their large populations.

TABLE #1

NUMBER OF VEHICLES PER STATE

STATES	TOTAL	PERCENT
Alabama	7	1
Alaska	345	43
Arizona	4	1
California	49	6
Colorado	5	1
Connecticut	7	1
Delaware	1	1
Florida	1	1
Idaho	4	1
Illinois	1	1
Iowa	7	1
Kansas	2	1
Louisiana	2	1
Maine	2	1
Maryland	1	1
Massachusetts	1	1
Michigan	9	1
Minnesota	2	1
Montana	1	1
Nebraska	1	1
Nevada	4	1
New York	11	1
North Carolina	3	1
Ohio	3	1
Oregon	24	3
Texas	16	2
Utah	3	1
Virginia	1	1
Washington	47	6
West Virginia	3	1
PROVINCES and TERRITORIES		
Alberta	44	6
British Columbia	41	5
Manitoba	4	1
Ontario	12	2
Saskatchewan	7	1
Yukon Territories	39	5

OTHERS		
non-Canadian or American licenses	5	1
not readable due to mud	40	5
not readable due to distance	36	5
	TOTAL	100*

*May not total 100% due to rounding.

Vehicles from the U.S. account for 71% of the sample.

Of the Canadian Provinces and Territories, Alberta, British Columbia, and the Yukon Territories represented 6%, 5%, and 5% of the sample, respectively.

The high usage from this region can be attributed mainly to its close proximity to the Taylor Highway.

Canadian vehicles accounted for a total of 20% of the sample.

Passengers per Vehicle

The number of passengers per vehicle was recorded. The results of this are shown in Table #2.

TABLE #2

PASSENGERS PER VEHICLE

NUMBER OF PASSENGERS PER VEHICLE	NUMBER OF VEHICLES
1	109
2	453
3	146
4	78
5	20
6	5
7	4
8 or more	9

Average number of people per vehicle 2.4 (excluding those with 8 or more).

There may be some question as to the accuracy of the 2.4 average figure. In some cases there could have been more occupants per vehicle; however, only those persons visible were recorded. The 2.4 average persons per vehicle may be somewhat conservative; therefore, based on my personal observations an average of 2.6 is not unrealistic.

The eight or more category was used primarily for buses, but in one case, a carry-all had eight or more occupants.

Type of Vehicle

Ten, general, vehicle type categories were formed, to collect data on the vehicle types using the highway. By identifying the types of vehicles travelling the Taylor Highway, this may give an indication as to the general purpose of the highway user. For example, if 70% of the vehicles using the Taylor Highway were motorhomes or campers, one could reasonably conclude the majority of the users are travelling the highway for recreational purposes.

The types and number of vehicles are shown in Table #3.

TABLE #3

VEHICLE TYPES

VEHICLE TYPE	NUMBER OBSERVED	PERCENT
motorcycle	10	1
passenger car and station wagon	177	21
pick-up truck	103	12
pick-up truck with canopy	126	15
pick-up truck with camper	119	14
truck	12	1
van	110	13
motorhome	113	13
carry-all	46	5
4-wheel drive	19	2
bus	8	1
TOTAL	843	100%*

*May not equal 100% due to rounding.

Looking strictly at the individual categories, passenger cars had the most observations comprising 21% of the sample. However, the most common vehicle from the sample was the pick-up truck. When the three categories of pick-up trucks are combined, they total 41% of the sample. This can be attributed to their versatility, and the particularly rough driving conditions of the Taylor Highway.

The majority of the Taylor Highway's traffic is recreation oriented. I would say from my personal observations, and the data from Table #3, that as much as 80% of the traffic is recreational oriented. The number of obvious recreational vehicles, such as pick-ups with campers, vans, motor homes, and vehicles pulling trailers comprises 48% of the sample. From personal observation I noted that many vehicles, though not specifically designed as recreational vehicles, were being used as such. Examples of this would be cars, pick-ups with canopys, carry-alls, four-wheel drives with camping gear, or a canoe tied to the roof. Many out-of-state vehicles showed evidence of touring by exhibiting signs such as "Alaska or bust" or similar phrases. Conservatively, from my observations, I would estimate 70% of each vehicle type (excluding trucks and other obvious recreational type vehicles such as pick-ups with campers, mobile homes, and van) as recreationally oriented. When adding these figures to the recreational type vehicles, the total comprises over 80% of the sample.

Observations of large trucks on the Taylor Highway were quite low. Trucks that were observed were typically road maintenance vehicles, or private contractors working on the bridge construction projects.

The low occurrence of four-wheel drive vehicles can be attributed somewhat to the collection method. A vehicle such as a pick-up or carry-all with four-wheel drive would be classified as a pick-up or carry-all. This was done simply to avoid a double counting. Only those vehicles that were designed for off-road travel, such as Jeep-type vehicles, were in this category.

The frequency of buses on the Taylor Highway was suprising. Although buses accounted for only 1% of the total sample, data collected from Poker Creek border crossing indicates that from June 10 to August 12, 131 buses crossed from either Canada to the U.S. or from the U.S. into Canada. This is an average of 2.1 buses per day.

During the ninety-six hours of observation, thirteen State of Alaska road maintenance vehicles were observed, as well as six Bureau of Land Management vehicles.

Direction of Travel

One of the primary reasons for locating the fixed locations in their respective locations (Walker Fork Campground, Jack Wade Junction and Liberty Campground, and later Fortymile Bridge) was to obtain accurate

data on the predominate flows of traffic between Dawson and Tetlin Junction, and traffic volumes to and from Eagle. The data shown in Table #4 is presented from each observation point.

TABLE #4

VEHICLE DIRECTION

	SOUTHBOUND	NORTHBOUND
Walker Fork	133	123
Liberty Campground	29	28

	Dawson to Tetlin	Tetlin to Dawson	Dawson to Eagle	Eagle to Dawson	Eagle to Tetlin	Tetlin to Eagle
Jack Wade Junction	253	183	16	12	37	26

TABLE #5

PNEUMATIC ROAD COUNTER AND BORDER CROSSING RESULTS

Pneumatic road counter placed at the Fortymile Bridge (MP 112) from July 15 through August 14. Results: 1,477 (estimated figure 1350*) 1350 multiplied by an average of 2.5 persons per vehicle = 3,475 people

U.S. Border crossing at Poker Creek

	BUS	OTHER VEHICLES	PEOPLE
U.S.	79	3,533	12,185
Canada	52	2,726	8,635
TOTAL	131	6,259	20,820

(for additional breakdown, see Appendix C)

Canadian Border Crossing at Poker Creek

Vehicles crossing from the U.S. to Canada (north) from June 10 through August 12: 2,726 vehicles, 52 buses, and 8,635 people.

*A local resident checked the Fortymile River's water level from the

bridge daily; thus, passing over the counter twice a day. During the recording period, the road maintenance department had road maintenance projects located at MP 108; thus, crossing the counter several times per day, to and from their camp at MP 114. The two crossings per day multiplied by 29 (number of days the counter was in place) totals 58. Maintenance workers indicate that they crossed the counter 8 times a day for ten days, for a total of 80 crossings. The two figures combined total 130, and when subtracted from 1,477, equals 1,357. 1357 was then rounded to 1,350.

The fixed observations at Walker Fork Campground and at Jack Wade Junction suggests that the majority of the highway's users, either travel from Tetlin Junction to Dawson, or from Dawson to Tetlin Junction. This is supported by the observation results, and the data gathered from Poker Creek Border Crossing. The data also indicates that southbound traffic is slightly higher than northbound.

Forty-eight hours of observation were spent at Jack Wade Junction, and 527 vehicles were recorded. Of these, the vast majority (83%) travelled between Dawson and Tetlin or Tetlin and Dawson. Of the remaining 17%, 3% travelled from Dawson to Eagle, 5% traveled from Tetlin Junction to Eagle, 7% travelled from Eagle to Tetlin Junction, and the remaining 2% travelled from Eagle to Dawson. Of the small percentage of traffic to Eagle, a greater number of vehicles came from Tetlin Junction than from Dawson (26 vehicles vs. 16 vehicles, respectively).

The types and numbers of vehicles observed going toward Eagle are shown on Table #6. These figures were combined from observations at Jack Wade Junction, Liberty Campground, and Fortymile River Bridge.

TABLE #6

VEHICLES TRAVELING TO EAGLE

VEHICLE TYPES	FREQUENCY	PERCENT
cars and station wagons	13	18.0
pick-up trucks	15	20.8
pick-ups with canopys	4	5.5
pick-ups with campers	10	13.8
trucks	1	1.3
motor homes	9	12.5
carry-alls	2	2.7
Jeeps	2	2.7
motorcycles	0	0.0
vans	16	2.0
buses	0	0.0
TOTAL	72	100%*

*Total may not equal 100% due to rounding.

Recreation vehicles such as campers, motorhomes, and vans accounted for 42% of the total traffic. From my personal observation I would say this figure is conservative. A certain percentage of the vehicles were pulling trailers, also other vehicles other than motorhomes, vans, or campers could also come under the heading of recreational vehicles. At least 60% of the traffic to Eagle is recreation oriented. This figure is based on the 42% known recreational vehicles, plus other vehicles observed as possible recreationally oriented, which were classified in other categories.

During the 72 hours of observation at Jack Wade Junction, Liberty Campground, and Fortymile River Bridge, a total of 148 vehicles were observed, an average of 2.0 vehicles per hour.

Peak Use Per Day

Peak usage was calculated by totaling the number of cars per day of the week. The results are shown in Table #7.

TABLE #7

PEAK DAY USE

	SAT	SUN	MON	TUE	WED	THURS	FRI
number of observation blocks	4	3	3	3	3	4	4
observation hours	16	12	12	12	12	16	16
cars observed	154	88	103	105	90	150	153
	116*					113*	115*
average vehicles per hour	9.6	7.3	8.6	8.7	7.5	9.4	9.6

*By dividing the number of cars on those days with four observations by four, and, then, subtracting the results from the total, the resulting figures should be of equal value to those days with only three observations.

The date from Table #7 indicates fairly constant travelling over the Taylor Highway throughout the week. Usage drops on Sunday and Wednesday did not appear to be consistent with the usage levels of the rest of the week. A review of the observation times each day revealed that Sunday's and Wednesday's observations were predominently in the morning hours

during low use periods; thus, accounting for the lower use figures on Sundays and Wednesdays. The traffic flow appeared to be relatively constant throughout the week. The data collection did not include any national holidays (refer to Appendix D).

PEAK USE HOURS

The following table shows the peak uses per hour.

TABLE #8

AVERAGE VEHICLES PER HOUR

	8 a.m. to 10 a.m.	10 a.m. to 12 a.m.	12 a.m. to 2 p.m.	2 p.m. to 4 p.m.	4 p.m. to 6 p.m.	6 p.m. to 8 p.m.
average vehicles per hour	5.1	8.3	10.2	8.4	7.3	.6

total vehicle average per hour - 6.6.

As somewhat expected, the highest use periods were in the middle of the day. The high usage time between 10 a.m. - 4 p.m. can be attributed to Poker Creek Border Crossing's hours: 8 a.m. - 8 p.m., Alaska Daylight Time.

Recreational Activities Along The Taylor Highway

The Taylor Highway has many potential recreational activities open to motorists. During the observations on the highway it was not uncommon to see vehicles parked at various locations, and their occupants partaking in some form of recreational activity along the roadside. Some of the more common recreational activities along the Taylor Highway include hiking, camping, fishing, hunting, river rafting, sightseeing, photography, recreational mining, and picnicing.

Different portions of the highway offer different types of recreational activities; however, the portion of the highway between Walker Fork Campground (MP 83) and Milepost 90 appeared to have the highest concentration of recreational use. This portion of the road passes through Jack Wade Creek drainage that contained high concentrations of gold at one time. Most of the area was mined by the Jack Wade dredge, which is now located at Milepost 86. As a result of the past mining activities, many tailing piles have been left along the length of the valley. Jack Wade Creek is also popular for recreational mining. The majority of this valley's mineral rights are owned by two mining claims which are still active. Even though the owners' permission should be obtained before one can mine, there is still a high frequency of recreational mining in this area.

Jack Wade dredge, located at Milepost 86, is a popular point of interest for many of the highway's users, and received a high amount of usage. On one particular afternoon, as many as 15 vehicles were observed parked at the dredge. The dredge's parking area is simply a leveled tailing pile, which was not designed to accomodate many vehicles. Due to the parking area's restricted size, and a large number of vehicles using the area, some of the vehicles were forced to park near or partially on the highway. The dredge itself serves as an interesting photographic subject, and because of its accessibility, users can also explore an original piece of mining equipment.

The active mines in the area, which could be a source of interest to many of the highway's users, deter many visitors from stopping by posting "NO Trespassing" signs.

Other activities in this area include fishing, picnicking, and camping. There is some evidence of overnight camping at several roadside locations between Milepost 83 and Milepost 90 (dispersed camping will be discussed in greater detail in a later chapter).

It is interesting to note, that although the land between Walker Fork Campground and Milepost 90 is one of the least aesthetically pleasing portions of the highway, due to the previous mining and resulting tailing piles, I observed that it also has the highest recreational roadside usage.

Other popular recreational mining areas are located in or around the American Creek drainage (Mipepost 149 to Milepost 160, approximately). Also located in this area is a developed picnic area (American Creek Wayside, Milepost 154).

Although river rafting is a recreational activity that does not directly involve the Taylor Highway, the highway does serve as a means of transportation to and from entrance and exit points. The highway passes over the Fortymile River and a number of its tributaries in several places.

Current figures for recreational activities along the highway are at best sketchy. Campground register forms give some indication of the various types of recreational activities that take place, and to a lesser extent, the frequency of those activities. However, not all campground users sign the register, and of those that do, not all fill out the spaces applicable to recreational activities.

Due to the nature of this study and its methodology, types and locations of recreational activities were recorded, but an attempt to calculate a quantative figure was not made. To attain an accurate indication as to the frequency of recreational activities, a study would have to be made through a consistent observation collection methodology or survey rather than informed observations.

Dispersed Camping

Dispersed camping along the Taylor Highway was a common sight throughout the observation periods. Though many areas served as impromptu camp sites, several areas consistently received use. It was not uncommon to observe vehicles stopped for the night in gravel pits, at roadside pull-offs, or other areas that provided level ground.

The majority of the dispersed camping was by self-contained vehicles, such as motor homes, pick-ups with campers, and vehicles pulling trailers. However, there were some tents observed, also.

Certain portions of the highway were subjected to higher amounts of dispersed camping than others. Areas such as picnic grounds at Milepost 6 and 147 (American Creek picnic area) were frequently used, as were various roadside pull-offs. The only area that received extended overnight use was the portion of the road between Walker Fork Campground (Milepost 83) and Milepost 93. Excluding this section of the Taylor Highway, the apparent reason for camping in undesigned campgrounds could be simply an obvious campsite at nightfall.

The region most heavily subjected to dispersed camping (Milepost 83-92) is, for the most part, on active mining claims. These areas of heavy overnight visitation are beginning to show signs of impact, the most apparent of which are a significant number of fire rings and scattered garbage.

Although there are several sites along the highway between Walker Fork and Milepost 92, the majority of the overnight usage is concentrated in two main areas. The Jack Wade Dredge (Milepost 82) and a flat graded area at Milepost 90. Facilities at these two areas are limited to litter containers only.

The area at Milepost 90 is approximately 75 feet wide and 500 feet long. In this area, over 21 fire rings were counted, and large amounts of trash observed. Other evidence of high use were the continual levels of trash deposited in the two trash cans located on the site. The Jack Wade Dredge also exhibited similar impacts, as several fire rings were observed and litter containers were consistently full, also.

There may be several reasons for the high overnight camping along this portion of the highway. Walker Fork Campground located at Milepost 83, received the heaviest use of the four campgrounds along the Taylor Highway. As a result, the campground is quite often filled to capacity. Vehicles arriving after the campground is full may use the roadside areas as an overflow campground. Recreational mining is a popular recreational activity in this particular section of the highway. Some vehicles were observed at the same location for as many as 14 days at a time. Often their campsites were near the area they were mining. Mining in this area is restricted to panning only by the owner.

Frequency of overnight camping at these areas is at best hard to estimate. To obtain an accurate sample, observations, or personal contact with the users would have to be made on a regular basis. The observations made on these areas were at random, and usually during transit from one point to another. The highest overnight use observed at Jack Wade Dredge was 7 vehicles. The highest overnight usage at Milepost 92 was somewhat less with 5 vehicles observed. An educated estimate, as to the average usage of these two areas, would be 2 vehicles per night.

Another area receiving substantial overnight camping is the parking lot at the Fortymile River Bridge (Milepost 112). The predominant overnight user here is also the self-contained vehicle, although two tents were observed. There is evidence of several fire rings at the site, but the usual indicator of volume, the large amounts of trash was not evident. The largest number of overnight campers observed was 4 vehicles.

The overnight usage at the Fortymile River Bridge can be attributed at least in part to recreational mining and river recreation.

Campgrounds

Campground register forms were collected from the four campgrounds located along the Taylor Highway. Periodic counts of the actual number

of campers in each campground were made throughout the study period. Figures were then compared to the totals of the corresponding day on the campground registers. Originally these spot counts were designed to check the accuracy of the campground register forms. However, as the spot counts progressed, it became apparent that the counts would have to be made late in the evening, or early in the morning when the campground was at its fullest. Though it was apparent that late evening or early morning was the optimum time for spot counts, logistics and fixed observation schedules prevented a large sampling at these times.

Of the 27 spot counts, five were made after 8 p.m. From this limited sample, the number of campers signing the register were approximately 75% the total number. This sample of 5 was taken exclusively from Walker Fork Campground.

Due to the schedule and logistics of the study, I was frequently in contact with Walker Fork Campground. During this time I made several observations concerning overuse of some areas, and potential solutions to these problems.

According to the register forms, Walker Fork received the highest frequence of camping at the four campgrounds, with a total of 201 registered parties from July 1 through August 20*.

Walker Fork is divided into separate camping areas, one area is reserved for tent camping only, and is composed of approximately 12 sites; the other is designed for recreational vehicles and has approximately 18 sites. The individual sites were designated by posts and contain picnic tables and metal fire grates. Campfire wood is also provided.

During the study period usage on the recreational vehicle side was quite heavy, and many times filled to capacity. Even though the recreational vehicle side was filled to beyond capacity, sites were still available on the tent side. Use of the tent side was restricted to the first 6 sites, which are located in the trees near the Walker Fork River. The last 6 sites are located in a wet area, and are now overgrown. Though these sites are not usable to tent campers, they could serve as an overflow campground for the recreational vehicle side. Observations nor registers indicate that it has been filled to capacity this summer.

Due to the high number of campers that Walker Fork received, additional sites would be advisable. Currently, when the recreational vehicle side is filled to capacity, additional vehicles create their own sites in the open spaces, in and around the designated sites.

Several parties used Walker Fork Campground on a full-time basis. Four of these parties were involved with the current bridge construction.

The only other campground observed, which had extended users, was

*Other usage figures were not available.

Forty-nine Mile. Parties there were also involved with the bridge construction projects.

The campground with the second highest use figures is Eagle, located near the town of Eagle (Milepost 169). Campground register forms for Eagle were collected from July 14, 1977 to August 17, 1977. During that time 110 parties registered. The average number of persons per party according to the number of parties registered were 3.4. The average length of stay was 1.7 days*. These figures will give some indication as to the amounts of visitation to Forty Egbert and the town of Eagle.

Figures were also obtained from Liberty Campground (Milepost 131). Liberty is the least used of the four Taylor Highway campgrounds, apparently due to its location to the other ones. The majority of the usage that Liberty receives is primarily day use. These figures can also give some indication as to the amount of visitation Eagle is receiving.

The campground register forms were collected from July 6, 1977 to August 6, 1977. During that time period, 58 parties signed the register. Of these, only 16 stayed overnight.

Typical comments from the registers, at all four campgrounds, were complimentary toward the campground in general, and to its facilities.

There was little evidence of vandalism within the campgrounds. Aside from some carving on the picnic tables, there was no evidence of damage to campground facilities.

During the study period I was only aware of two incidents of theft, both involving campers. Gasoline was stolen from an individual at the Fortymile Bridge, and equipment was taken from a person at Walker Fork Campground. A possibility exists that both of these thefts were committed by the same person.

*Of the 110 registered parties, nineteen failed to record their length of stay.

Policy Recommendations

Campgrounds

Forty-nine Mile. Although Forty-nine Mile Campground does not receive a substantial use, it is beginning to show signs of impact. The area suffering the greatest environmental impact is the open grass area, in the first portion of the campground (refer to Fig.2). The right portion of the campground's road is rarely used, due to its rough condition. The majority of the traffic uses the left road, as evidenced by tire treads.

Recommendations for this area are to close the right hand section of the road, and begin restoration of the impacted areas. There are some camping sites in these areas that would be eliminated. The majority of the sites at Forty-nine Mile are toward the back end of the campground, located among the trees. There is ample room in that location to construct several more sites to replace the ones eliminated for restoration. Construction of these additional sites would not detract from the aesthetic qualities of the other sites by over-crowding.

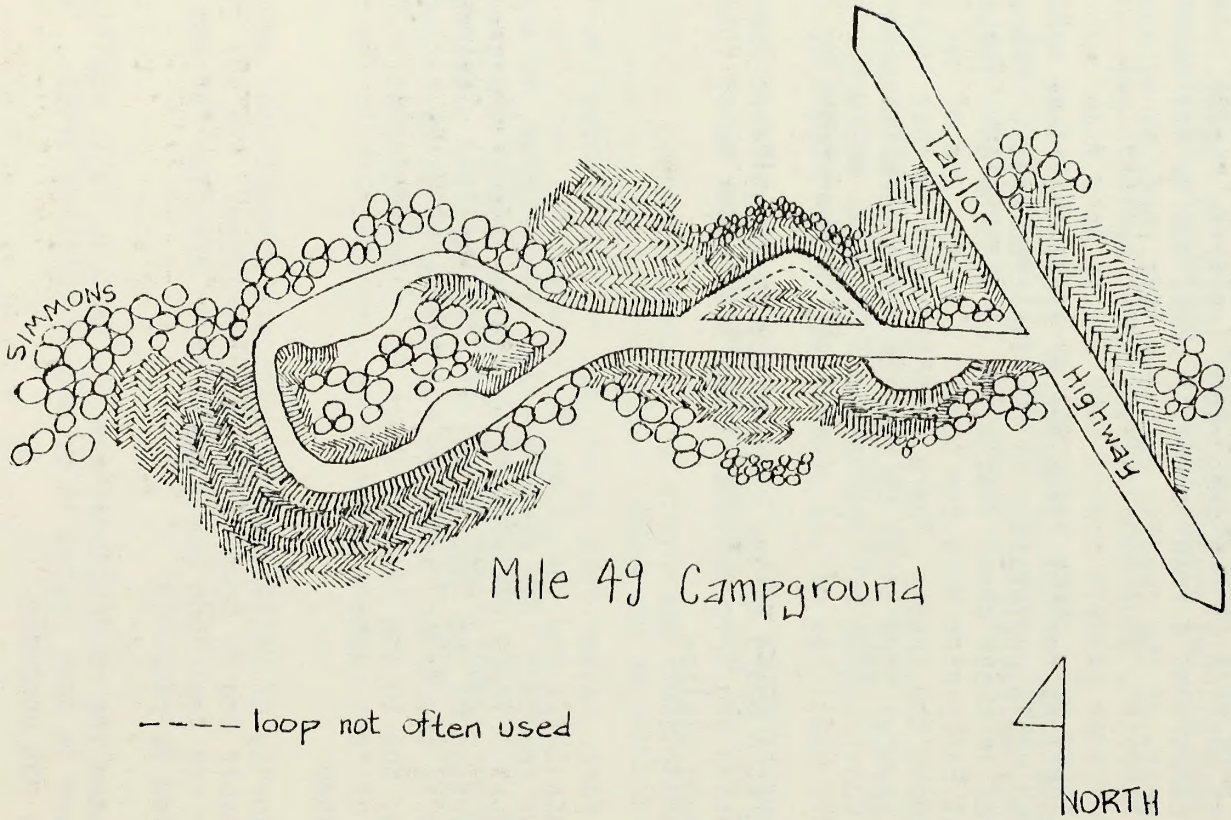
The bulletin board by the register could be utilized for interpretive information and informational items that might be of interest to the campground visitor.

Walker Fork. Walker Fork is divided into two loops; one is designated for tents only, and the other for recreational vehicles. The last six sites on the tent loop have received little usage, if any, and have grown over. These sites are also located out of the trees, in muskeg. This portion of the loop is not as aesthetically pleasing as those sites located in the trees, and does not appear to be as conducive to tent camping, due to the limited space for pitching tents. The current number of tent campers seems to be proportionate to the number of sites being used.

The majority of Walker Fork's users are recreational vehicles (RV), and as a result the RV loop fills up quite often. The six sites not being used in the tent loop could serve as an overflow for the RV loop when it is filled to capacity.

Often when the recreational vehicle loop is full, additional campers will camp in open spaces in or around existing sites. Two campers to a site is not uncommon.

Construction of approximately ten sites would lessen the impact on the sites, and provide adequate space during the heavy use periods. The ten site figure is an estimate. It was reached by observing the number of vehicles camped in non-camp sites during times when the campground was filled to capacity. With the addition of the ten sites, extra toilet,


Taylor
Highway
SIMMONS
Mile 49 Campground
---- loop not often used
NORTH

wood and water facilities would have to be added.

Interpretation facilities could also be added. The history of Walker Fork as well as past and present mining activities, serve as possible interpretation subjects.

Information items such as distances to various locations along the highway or points of interest, in addition to recreational activities in and around the Walker Fork Campground area, could also be posted.

Liberty Campground. The register forms collected from Liberty indicate that the majority of usage at Liberty Campground is day use oriented. Apparently the campground is being used primarily as a picnic area.

The only recommendation for Liberty is the posting of informational items, such as points of interest or recreational activities, in and around the area.

American Creek Wayside. The size of the picnic area seems proportionate to its use. The only recommendation for this area would be more interpretative facilities describing the placer mining history, and the various recreational activities available. Other information items such as travel distance mileages to locations along the highway, and interesting places to visit might also be included.

ROAD-SIDE AREAS

Interpretative Sign MP 35. (This area receives some day-use activity.) A small picnic area with the facilities could be developed here. The appearance of facilities may also result in an increase of use in the area. Information signs giving distances to locations along the highway, and recreational activities in or around the area could also be posted.

Jack Wade Dredge. The high amount of day usage warrants appropriate day use facilities, such as picnic tables and fire rings. Currently, the area around the dredge is not large enough to support a picnic area and parking lot; however, the area on the other side of the creek would be well suited for a picnic area.

Recommendations for this area are to construct a picnic area of approximately eight tables on the far side of Jack Wade Creek. This figure is an estimate based on the number of vehicles using the area during high use periods. In addition, on site interpretation of the dredge, and of past and present mine activities are also needed. Informational

facilities as to the recreational activities, and points of interest in and around the area could also be posted.

Fortymile River Bridge. This area is currently receiving overnight camping. Development of a small campground is somewhat premature without an additional year study. The amount of time spent at Mile 112 was not sufficient to make the needed observations to determine whether an additional campground is warranted. Picnic tables and fire grates should be installed.

A vehicle access road to the river should also be constructed, as the area serves as a popular exit point for the Fortymile River users. This may bring an increase in motor boat traffic.

Here again, informational signs would also be appropriate.

Further Study

The user profile presented for the 1977 season gives a valid indication as to the type of vehicles, amounts of usage, and the predominant direction of travel.

This study was conducted between June 27 and August 14 when the traffic volume was its highest. To achieve a complete profile of the Taylor Highway, additional studies should be conducted in the months directly after the highway opens, and the month before it closes for the winter. I suspect that the user profile will change as usage increases or decreases with the different seasons. This year the area around the Taylor Highway was closed to moose and caribou hunting. This may not be the case next year. Factors like hunting seasons will alter the user profile for that time period.

In the coming years, different factors that may occur, such as paving the road surface or the construction of a pipeline along the highway will also cause the profile to change.

To keep current description of the user profile a follow-up study should be conducted every three years. In this manner, this year's study can be compared to subsequent studies, thus giving an indication as to user trends in the coming years.

Further study should also include more emphasis on calculating the amounts and effects of dispersed camping along various portions of the highway. Findings from future studies will give some indication as to possible sites for campgrounds and picnic areas.

The campground register checks should also be continued. The campground registers give an indication as to the amounts of visitation the campgrounds are receiving and the types of recreational activities that are taking place. These spot counts can be carried out by the BLM personnel at Chicken and Eagle guard stations.

This study was based primarily on observations. However, certain questions could not be answered by observation gathering techniques. A written or verbal survey should be given to the Taylor Highway users next season. This survey will also serve as a check on the conclusion from this report.

A primary reason for collecting the informal data was to assess the validity of the informal data collection method. Originally, the informal data collection was to serve as a means of continuing this study in the coming years. However, when the informal data was compared to the statistical data differences in the findings, which appeared to have resulted in inconsistencies (which are innate in casual collection methods) were found. Data gathered in the future from informal collect-methods may give some indication as to the types of vehicles but

the findings must be reviewed with the understanding that certain biases exist within the collection methods employed by this study.

Priority of Future Studies

1) Follow-up studies in three years
2) Campground checks next season
3) Dispersed camping studies next year
4) Additional observations at the beginning and end of season

Appendix A
Example of data recording sheet.

ID NO.	LIC.	PASS.	TYPE	DIRECTION	MILE	DAY	TIME	WEATHER	COMMENTS

APPENDIX B

Pneumatic road counter placed at the Fortymile River Bridge, Mile 112.

Results:

DATE	READING	TIME
7/15	8954	1400 hrs.
7/17	9052	1500 hrs.
7/22	9276	1430 hrs.
7/23	9325	1030 hrs.
7/24	9364	1930 hrs.
7/31	9786	missing
8/1	9836	1100 hrs.
8/7	10130	1800 hrs.
8/14	10431	1200 hrs.

Total vehicles counted: 1,477

APPENDIX C

Border crossing data from Poker Creek, U.S.A.

	BUSES	OTHER VEHICLES	PEOPLE
June 10-30	10	1044	3439
July	51	1887	6673
Aug 1-12	10	600	2073
TOTAL	79	3533	12185
Canada			
June 10-30	12	402	1378
July	30	1633	5293
Aug 1-12	10	671	1954
TOTAL	52	2726	8635

APPENDIX D

HOURS OF THE DAY

	8	9	10	11	12	1	2	3	4	5	6	7	8
								1	1	1	1		
					1	1	1	1					
			1	1	1	1							
					1	1	1	1					
	1	1	1	1									
								1	1	1	1		
				1	1	1	1						
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										1	1	1	1
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	1	1	1	1									
					1	1	1	1					
	1	1	1	1									
SUBTOTAL	6	7	11	13	11	10	6	10	6	7	7	1	1
TOTAL	13		24		21		16		13		8		1
TOTAL VEHICLES OBSERVED	67		200		216		125		135		95		NA
AVERAGE VEHICLES PER HR.	5.1		8.3		10.2		8.4		7.3		.6		NA

TOTAL AVERAGE VEHICLES PER HOUR - 6.6

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This intern report was read and accepted by a staff member at:

Agency: Bureau of Land Management - Fairbanks District Office

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This report was completed by a WICHE intern. This intern's project was part of the Resources Development Internship Program administered by the Western Interstate Commission for Higher Education (WICHE).

The purpose of the internship program is to bring organizations involved in community and economic development, environmental problems and their students in the West for the benefit of all.

For these organizations, the intern program provides the problem-solving talents of student manpower while making the resources of universities and colleges more available. For institutions of higher education, the program provides relevant field education for their students while building their capacity for problem-solving.

WICHE is an organization in the West uniquely suited for sponsoring such a program. It is an interstate agency formed by the thirteen western states for the specific purpose of relating the resources of higher education to the needs of western citizens. WICHE has been concerned with a broad range of community needs in the West for some time, insofar as they bear directly on the well-being of western peoples and the future of higher education in the West. WICHE feels that the internship program is one method for meeting its obligations within the thirteen western states. In its efforts to achieve these objectives, WICHE appreciates having received the generous support and assistance of the National Endowment for the Humanities, the Washington State Office of Community Development CETA Program, the Colorado Department of Labor and Employment; and by more than one hundred and fifty community agencies throughout the West.

For further information, write Bob Hullinghorst, Director, Resources Development Internship Program, WICHE, P. O. Drawer 'P', Boulder, Colorado 80302 or call (303) 443-6144.

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